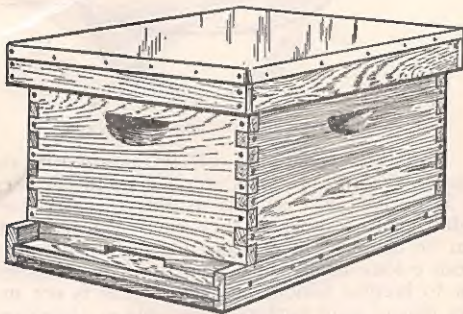


Diseases of Brood.—There are two diseases that attack the brood of honeybees; one is known as American, and the other as European foul brood. The American foul brood is the more serious, so serious that no cure can be safely applied. The bee-keeper who finds it in his hives should burn the combs, bees and all, and scorch out the inside of the hive with a blow torch before it is used again. The second disease known as European foul brood, can be cured by building up the strength of the colony, introducing a queen of vigorous, Italian strain. The building-up consists of giving frames of emerging brood so that the strength of the colony will be rapidly increased. For further particulars, send to the Bureau of Entomology, Bee Culture Laboratory, Washington, D.C. Treatment and cure will be described for both diseases, except that in the case of American foul brood, complete destruction of bees is recommended.



Modern hive of "Langstroth" dimensions.

Enemies of Bees.—A number of insects, birds, and mammals must be classed as enemies of bees, but of these the larger wax moth, the lesser wax moth, and ants are the only ones of importance. Moth larvae often destroy combs. To prevent this the combs are fumigated with paradichlorobenzene or bisulphide of carbon in tiers of hives or in tight rooms. In warm climates ants are a serious pest. The usual method of keeping them out is to put the hive on a stand, the legs of which rest in vessels containing oil or creosote.

Bibliography.—Lovell, J. H., *Honey Plants of North America* (Illinois 1926); Langstroth, L. L., *Langstroth on the Hive and the Honey Bee*, rev. and ed. first in 1888, and through several editions to the 23d by Dadant, C. P. (Illinois 1927); Phillips, E. F., *Beekeeping*, rev. ed. (New York 1928); Rowe, H. G., *Starting Right with the Bees*, 4th ed. (New York 1936); Teale, E. W., *The Golden Throng* (Toronto 1940); Root, E. R., *ABC & XYZ of Bee Culture* (Ohio 1950); *Bulletins from the Bureau of Agricultural Economics*, U.S. Department of Agriculture.

E. R. Root,

Author of "ABC & XYZ of Bee Culture" and
Editor of "Gleanings in Bee Culture."

BEE KILLER, one of the robber flies (q.v.), of the dipterous family Asilidae, some of which are known to seize with their sharp lancet-shaped beak bumblebees and honeybees and suck their blood. This species *Trupanea apivora*, the bee killer, captures the honeybee while on the wing, and one such fly has been known to kill 141 bees in a single day. These flies are stout-bodied, hairy or bristly, with a long abdomen; the mouth parts are much developed and adapted for piercing. The maggots live in the soil, preying on the grubs of beetles, or on the roots of plants.

BEE LARKSPUR. A well-known flowering plant, *Delphinium elatum*, having a flower resembling a bee.

BEE LOUSE (*Brasilia coeca*), is a parasite on the honeybee, occurring on the thorax especially of the queen bee—rarely on the drones. Frank Benton, American apiculturist, states that he at one time removed as many as 75 from a queen, though the numbers do not generally exceed a dozen. The bee louse is about one-twentieth of an inch in length, entirely without wings, and somewhat spiderlike in appearance. On the day the maggot or larva hatches from the egg it sheds its skin and turns to an oval puparium of a dark-brown color. It has frequently been imported to the United States on queens with attendant bees but has gained no foothold.

BEE MARTIN, the kingbird, a flycatcher which occasionally eats bees. See KINGBIRD.

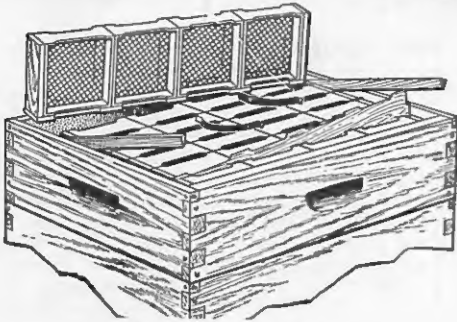
BEE MOTH, a moth belonging to the family Galleriidae; specifically, *Galleria mellonella*, the larva of which feeds on wax in hives. The worm is yellowish-white with brownish dots. It constructs silken galleries running through the comb of the beehive on which it feeds. When about to transform it spins a thick white cocoon. Two broods of the moth appear, one in the spring, the other in August, and the caterpillars mature in about three weeks. It may become a most troublesome pest in the apiary.

BEE ORCHIS, the name of a species of orchis, the *Arachnites apifera*. It is so called because a part of the flower resembles a bee. It is large, with the sepals purplish or greenish-white, and the lip brown variegated with yellow.

BEE TREE, a forest tree inhabited by honey-making bees, which have taken possession of some natural hollow and filled it with combs. Such a tree may be found by accident, or by deliberate hunting. Those in search take to the edge of the woods a box of diluted honey, and when they see bees near them, open the bait to which one by one the bees will be attracted. The direction of their flight is then carefully observed; the bait is moved to another point, and new observations taken, and the converging lines followed until they intersect at the tree. As most of these bee-tree colonies are escaped swarms the capture of the bees themselves is more important than merely to get such honey as may be there. The best plan is therefore to climb to the nest, if possible, and gather the combs and contents to be let down in a pail or basket, or else saw out the whole section of the tree containing the nest and lower it to the ground. Full directions for this complicated proceeding are given by Root, E. R., *ABC and XYZ of Bee Culture* (Ohio 1950).

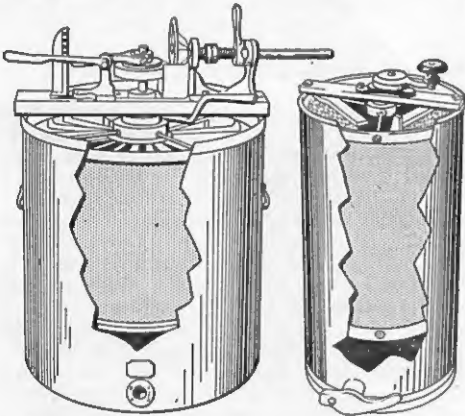
BEEBE, be-be (Charles) William, American scientist, explorer, and author: b. Brooklyn, N. Y., July 29, 1877. He was graduated from Columbia University in 1898, and since 1899 has been honorary curator of ornithology, New York Zoological Society; also director of the Department of Scientific Research. He is credited with having made the collection of living birds at the New York Zoological Gardens one of the finest.

Swarming.—At the beginning of or during what is called the honey flow, when the colony



Bee-way section super.

has reached a high state of prosperity and the combs are being filled with honey, a swarm may come forth between the hours of 9 A.M. and 3 P.M. Most of the bees, including the queen, are pretty sure to come out with a rush, thousands of them being in the air. The bees hover about for 15 or 20 minutes, when they will in all probability cluster on some bush or tree. They will wait here for two or three hours, or perhaps overnight, at the end of which time they will take wing again and go direct into some hollow tree or cave where they will take up new quarters and start housekeeping anew. The young bees, together with those unhatched, with one or more young queens, are left to take care of the old hive.



Honey extractors: left, power-operated; right, hand-operated.

In ordinary practice it is a custom for the bee-keeper to rehive the swarm by taking the bees as soon as they cluster and putting them into another hive. Or, he may, if he chooses, clip the old queen's wings, preventing her flight with the swarm; and when the bees come forth she will crawl out of the entrance to be captured by her owner, and as soon as her subjects return, which they will do to find their royal mother, they are allowed to go in to a new hive on the old stand, while the old hive is carried to another location in the bee yard.

Prevention of Swarming.—Since crowded and overheated hives are conducive to swarming, this tendency is overcome by giving plenty of ventilation and additional room in the hive.

Shade is also a good preventive. Frequent examinations of the hive during the swarming season for the purpose of cutting out queen cells is a help, and requeening with young queens early in the season generally prevents swarming.



Bee-keeper removing cappings from a comb.

Robbing.—There are certain times during the season when no nectar is secreted by the flowers. It is during such periods as this that the bees will rob each other if they can. When sweets can be obtained in considerable quantity from a weak colony unable to defend itself, the bees are apt to become furious and their craze is not unlike that of gold hunters when gold is discovered in large quantities. There is a rush and when the sweets are suddenly cut off, the bees are inclined to be cross and to sting. The wise and careful bee-keeper will see to it that the entrances of his weak colonies are properly contracted so that the sentinels or guards can protect themselves from intrusion from other bees.

Feeding.—When bees are short of honey, sugar sirup may be substituted. This is fed to the bees in an inverted can with a few small holes punched in the lid. This is placed on top of the colony and enclosed in the upper story of the beehive. Feeding, at best, is a necessary evil. It is always better to give bees combs of honey or better yet, a whole hive body of combs containing honey. Sugar sirup—two parts sugar, one part water—is not a natural food and should be used only when no sweet is available from the field.

Transferring.—In increasing the apiary it is sometimes best to buy colonies in box hives on account of their smaller cost, and to transfer them to hives with movable frames. This should be done as soon as possible, for box-hive colonies are of small value as producers. The best time to transfer is in the spring, when the amount of honey and the population of the colony are at a minimum. Transferring need not be delayed until spring merely because that season is best for the work. It may be done at any time during the active season, but, whenever possible, during a honey flow, to prevent robbing.

Wintering.—During the winter it is often desirable to protect the hives with waterproof paper, with packing material between hive and paper in cold climates. The entrances should be contracted down to shut out as much cold as possible. In extremely cold climates the hives may be carried in to a suitable cellar.